FACT SHEET

PERMITTEE/FACILITY NAME: City of Detroit Water and Sewerage Department / City of Detroit Wastewater Treatment Plant

COUNTY: Wayne

DESCRIPTION OF EXISTING WASTEWATER TREATMENT FACILITIES:

The treatment processes at the Detroit Wastewater Treatment Plant include preliminary treatment, primary treatment incorporating chemical feed for phosphorus removal, secondary treatment, chlorination, and sludge treatment and disposal.

The preliminary treatment processes include raw wastewater pumping, screening, and grit removal.

Primary treatment includes sedimentation/settling and phosphorus removal in clarifiers. The sludge settled in the clarifiers is removed to gravity thickeners. The wet-weather primary treatment capacity is 1,700 million gallons per day (MGD) of raw inflow.

Secondary treatment facilities include lift stations, aeration basins, a blower building/facility, and final clarifiers. Secondary treatment capacity is 930 MGD during wet-weather events.

Disinfection is provided by chlorination. The effluent is then dechlorinated and discharged.

The sludge processing system consists of sludge thickening, blending and storage tanks, centrifuges, and belt-filter presses. In addition, facilities for sludge pumping, polymer feed, and cake conveying are provided. Sludge disposal is accomplished either by incineration in a multiple hearth incineration system or it is lime stabilized for off-site hauling and disposal in a landfill.

RECEIVING WATERS:

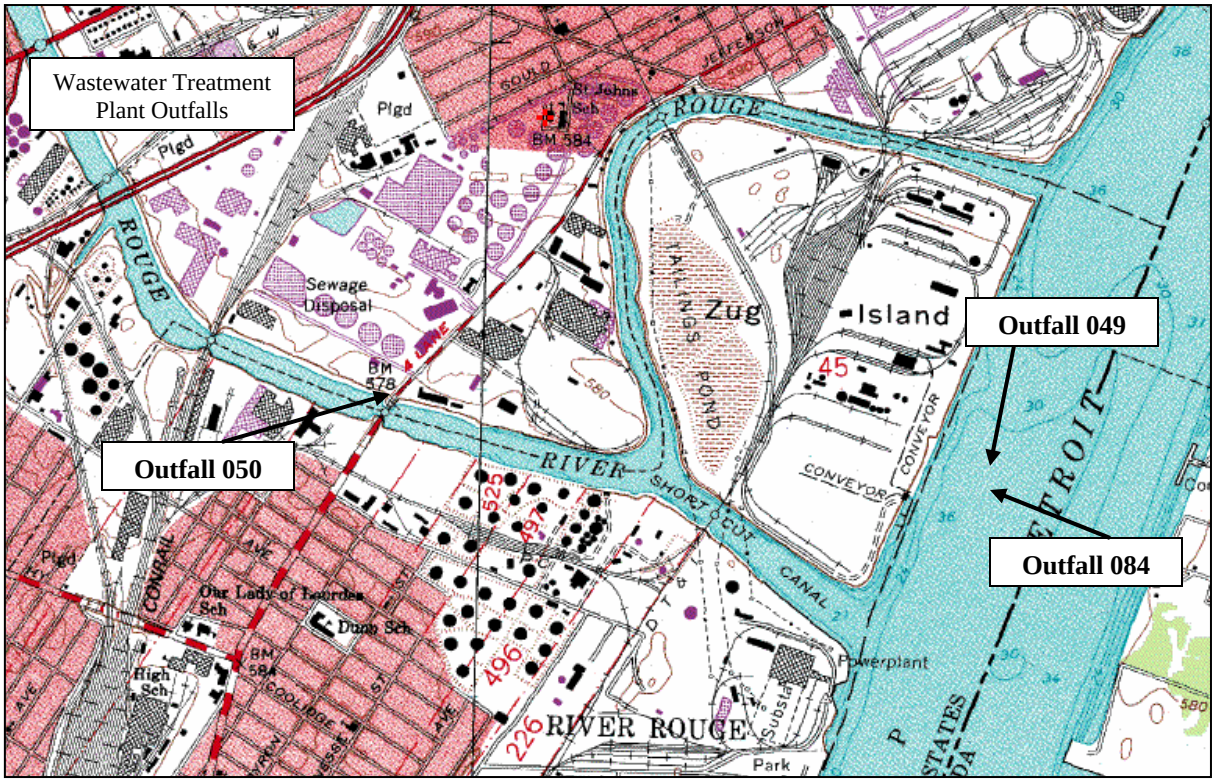
The Detroit River is protected for agricultural uses, navigation, industrial water supply, public water supply, cold-water fish, other indigenous aquatic life and wildlife, partial body contact recreation, and total body contact recreation (May through October).

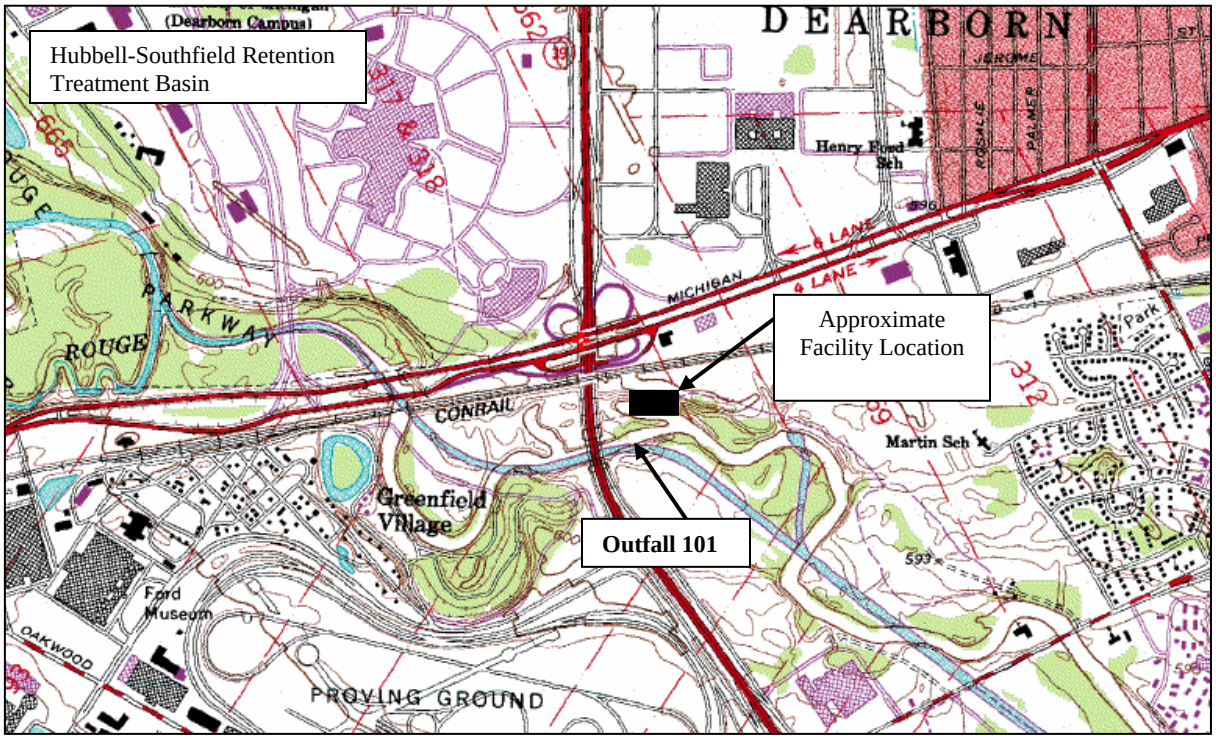
The Rouge River, Conner Creek, Fox Creek, and O'Brien Drain are protected for agricultural uses, navigation, industrial water supply, public water supply at the point of water intake, warm-water fish, other indigenous aquatic life and wildlife, partial body contact recreation, and total body contact recreation (May through October).

For the outfalls discharging to the Detroit River, the receiving stream flows used to develop effluent limitations are a 95 percent exceedance flow of 130,000 cfs, a harmonic mean flow of 209,000 cfs, and a 90-day, 10-year low flow of 185,000 cfs.

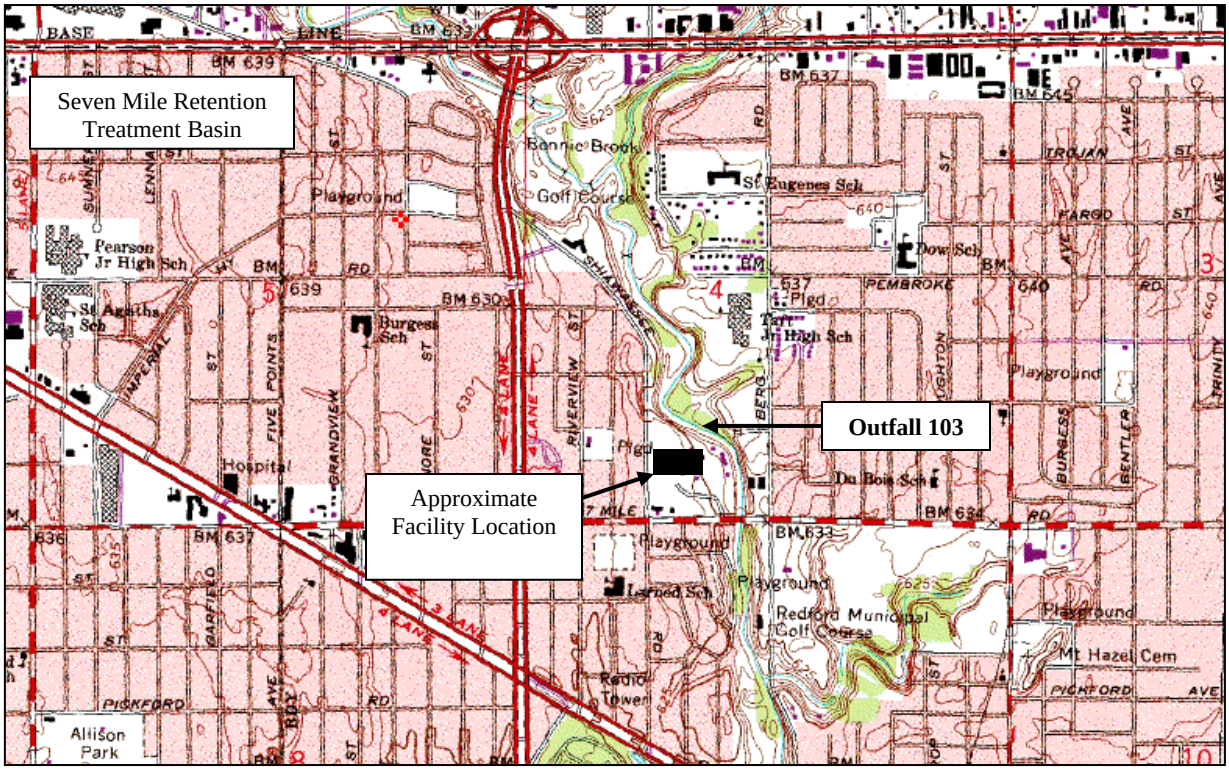
For the outfalls discharging to the Rouge River, the receiving stream flows used to develop effluent limitations are a 95 percent exceedance flow of 13 cfs, a harmonic mean flow of 80 cfs, and a 90-day, 10-year low flow of 27 cfs.

MAPS OF DISCHARGE LOCATIONS:

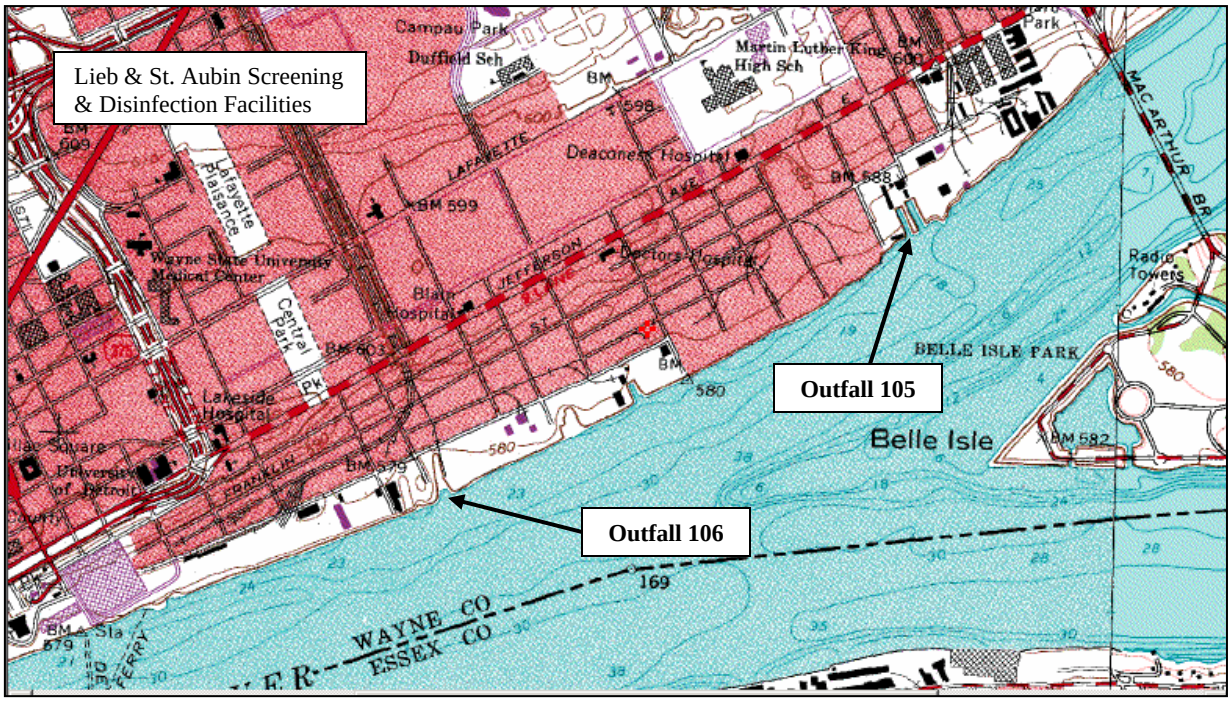




MAPS OF DISCHARGE LOCATIONS (continued):



MAPS OF DISCHARGE LOCATIONS (continued):



MIXING ZONE:

For toxic pollutants in the outfalls discharging to the Detroit River, the volume of the Detroit River used in assuring that effluent limitations are sufficiently stringent to meet Water Quality Standards is 12.5 percent of the applicable design flows of the receiving stream.

For toxic pollutants in the outfalls discharging to the Rouge River, Conner Creek, Fox Creek, and O'Brien Drain, the volume of the receiving stream used in assuring that effluent limitations are sufficiently stringent to meet Water Quality Standards is 25 percent of the applicable design flows of the receiving stream.

For other pollutants, the volume of the receiving stream used in assuring that effluent limitations are sufficiently stringent to meet Water Quality Standards is the applicable design flows of the receiving stream.

EXISTING EFFLUENT QUALITY: (from DMR data from January 1, 2005, to April 30, 2007)

Monitoring Point 049F/Outfall 049

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	830 MGD	1,287 MGD
Total Residual Chlorine	---	---	0.19 mg/l
Oil & Grease	---	---	5.0 mg/l
Amenable Cyanide	---	---	32 μg/l
Total Mercury	---	---	9 ng/l
Total PCBs	---	---	< 0.2 μg/l
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	---	---	112mg/l
	---	---	
Ammonia Nitrogen (as N)	---	14.2 mg/l	18.6 mg/l
Acute Toxicity	---	---	1.5 TU_A
Dissolved Oxygen	3.4 mg/l	---	---
pH	6.5 S.U.	---	7.2 S.U.
			Maximum Weekly
Fecal Coliform Bacteria	---	134 cts/100 ml	321 cts/100 ml

Monitoring Point 049A (monitoring location following primary treatment processes)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	69 MGD	330 MGD
$CBOD_5$	---	38 mg/l	81 mg/l
Total Suspended Solids	---	59 mg/l	---
Total Phosphorus (as P)	---	1.37 mg/l	---
Ammonia Nitrogen (as N)	---	7.6 mg/l	14.8 mg/l

Monitoring Point 049B (monitoring location following secondary treatment processes)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	855 MGD	1,022 MGD
$CBOD_5$	---	11 mg/l	28 mg/l
Total Suspended Solids	---	25 mg/l	46 mg/l
Total Phosphorus (as P)	---	0.87 mg/l	---
Ammonia Nitrogen (as N)	---	14.3 mg/l	18.7 mg/l
		Minimum Monthly	
$CBOD_5$ Minimum Percent Removal	---	89.6 %	---
Total Suspended Solids Minimum Percent Removal		82.1 %	---

EXISTING EFFLUENT QUALITY (Continued):

Monitoring Point 050A (the monitoring point for the Rouge River Outfall)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	122 MGD	739 MGD
$CBOD_5$	---	8.7 mg/l	17.4 mg/l
Total Suspended Solids	---	---	84 mg/l
Total Phosphorus	---	1.11 mg/l	---
Ammonia Nitrogen (as N)	---	8.7 mg/l	17.4 mg/l

Monitoring Point 050 (the monitoring point for the Rouge River Outfall)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Total Cadmium	---	---	<5 μg/l
Total Copper	---	---	98 μg/l
Amenable Cyanide	---	---	181 μg/l
Total Mercury	---	---	54 ng/l
Total PCBs	---	0.01 μg/l	---
Acute Toxicity	---	---	0 TU_A
Dissolved Oxygen	1.0 mg/l	---	---
pH	6.56 S.U.	---	7.57 S.U.

Monitoring Point 101A (Hubbell-Southfield CSO Retention Treatment Basin)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	19.8 MGD	300 MGD
$CBOD_5$	---	41 mg/l	56 mg/l
Total Suspended Solids	---	203 mg/l	232 mg/l
Ammonia Nitrogen (as N)	---	1.2 mg/l	4.1 mg/l
Total Phosphorus (as P)	---	1.17 mg/l	1.69 mg/l
Fecal Coliform Bacteria	---	230 cts/100 ml	452 cts/100 ml
Total Residual Chlorine	---	---	6.65 mg/l
Dissolved Oxygen	3.1 mg/l	---	---
pH	6.7 S.U.	---	7.8 S.U.

Monitoring Point 105A (Lieb CSO Screening and Disinfection Facility)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	0.4 MGD	13.4 MGD
Fecal Coliform Bacteria	---		240000 cts/100 ml
Total Residual Chlorine	---	---	4.12 mg/l
Dissolved Oxygen	4.4 mg/l	---	---
pH	6.8 S.U.	---	9.1 S.U.

EXISTING EFFLUENT QUALITY (Continued):

Monitoring Point 106A (St. Aubin CSO Screening and Disinfection Facility)

Parameter	Minimum Daily	Maximum Monthly	Maximum Daily
Flow	---	0.3 MGD	8.2 MGD
Fecal Coliform Bacteria	---		128400 cts/100 ml
Total Residual Chlorine	---	---	2.72 mg/l
Dissolved Oxygen	1.5 mg/l	---	---
pH	6.1 S.U.	---	9.1 S.U.

Monitoring Point 102A (Puritan-Fenkell CSO Retention Treatment Basin)

*No discharge during the period January 1, 2005, to April 30, 2007.

Monitoring Point 103A (Seven Mile CSO Retention Treatment Basin)

*No discharge during the period January 1, 2005, to April 30, 2007.

Note: Maximum concentration and maximum mass loading are not necessarily for the same time period.

PROPOSED EFFLUENT LIMITATIONS: (see draft permit)

BASIS FOR PROPOSED EFFLUENT LIMITATIONS:

Based on this facility's application for an NPDES discharge permit, the Michigan Department of Environmental Quality proposes to issue the applicant a permit to discharge, subject to effluent limitations and certain other conditions within the permit. Effluent limitations for total mercury, total PCBs, total residual chlorine, acute toxicity, amenable cyanide, fecal coliform bacteria, total phosphorus, pH, and dissolved oxygen, and effluent monitoring requirements for total mercury, total PCBs, total residual chlorine, acute toxicity, amenable cyanide, total copper, fecal coliform bacteria, total phosphorus, ammonia nitrogen, five-day carbonaceous biochemical oxygen demand ($CBOD_5$), pH, and dissolved oxygen are based upon water quality standards. Effluent limitations at Monitoring Point 049B for five-day carbonaceous biochemical oxygen demand ($CBOD_5$) and total suspended solids, and the associated minimum percent removal requirements for these two pollutants are based upon federal secondary treatment standards. The effluent limitations for five-day carbonaceous biochemical oxygen demand ($CBOD_5$) and total suspended solids at Monitoring Point 049A, Monitoring Point 050A, and Monitoring Point 084A are based upon the permit writer's judgment of appropriate pollutant removal during primary treatment. The permit's requirements for flow monitoring are based upon the permit writer's judgment.

ADDITIONAL INFORMATION:

Part I.A.2. of the permit authorizes discharges from the wastewater treatment plant's primary treated effluent conduit to the surface waters of the state during or following wet-weather events when the hydraulic capacity of the secondary treatment facilities are exceeded (i.e., greater than 930 MGD). Because the flows tributary to the treatment works are primarily from combined sewer collection systems, the discharge authorized in Part I.A.2. of the permit is consistent with an authorization for a combined sewer overflow discharge. Further, this authorization is appropriate and consistent with state and federal regulations and policies regarding authorizations from combined sewer systems.

REGISTER OF INTERESTED PERSONS

Any person interested in a particular application, or group of applications, may leave his/her name, address, and telephone number as part of the file for an application. The list of names will be maintained as a means for persons with an interest in an application to contact others with similar interests.

PUBLIC COMMENT

Comments or objections to the draft permit received between August 24, 2007, and September 24, 2007, will be considered in the final decision to issue the permit. If submitted comments indicate significant public interest in the application or if useful information may be produced, the Michigan Department of Environmental Quality, at its discretion, may hold a public hearing on the application. Any person may request the Michigan Department of Environmental Quality to hold a public hearing on the application. The request should include specific reasons for the request, indicating which portions of the application or draft permit constitutes the need for a hearing.

Public notice of a hearing will be provided at least thirty (30) days in advance. The hearing will normally be held in the vicinity of the discharge. The Michigan Department of Environmental Quality will consider comments made at the hearing when making its final determinations on the permit. Further information regarding the draft permit, and procedures for commenting or requesting a public hearing may be obtained by contacting Karen Lauterbach, Permits Section, Water Bureau, Department of Environmental Quality, P.O. Box 30273, Lansing, Michigan, 48909, telephone: 517-373-1326; email: lauterbk@michigan.gov.